Crow Creek Bridge
Grove Way
Castro Valley
Alameda County
California

HAER No. CA-19

HAER
CAL,
1-CAVA,
1-

PHOTOGRAPHS

HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service, Western Region
Department of the Interior
San Francisco, California 94102

HAER
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HISTORIC AMERICAN ENGINEERING RECORD

CROW CREEK BRIDGE
CA-19

DATE: 1913

LOCATION: Spanning Crow Creek on Grove Way, southeast of Castro Valley Boulevard near Interstate Route 580, Castro Valley, Alameda County, California

DESIGNED BY: Unknown

OWNER: Alameda County Department of Public Works

SIGNIFICANCE: The Crow Creek Bridge is significant in the area of engineering at the local level. It is the only known barrel-arch, open spandrel bridge in Alameda County, and represents a reinforced concrete bridge design that is transitional between the filled spandrel and the open spandrel types.

HISTORIAN: John W. Snyder, California Department of Transportation

TRANSMITTED BY: Monica E. Hawley, Historian, 1983

As shown in Exhibits 1 and 2, Grove Way crosses Crow Creek in the community of Castro Valley over Bridge No. 33C-204, known locally as the Crow Creek Bridge. This bridge is a three-span, two-lane structure 104 feet long and 33.4 feet wide. Spans 1 and 3 are reinforced concrete T beam spans. Span 2 is a reinforced concrete open spandrel arch, with full-width vertical support members carried on a single, full-width barrel arch ring. The structure has reinforced concrete pier wall and wing abutments and solid concrete rails. The bridge has no skew, and roadway width is 25 feet. The only evident alteration to the bridge is the removal of what were apparently original light standards from the railings at each end of the bridge. The structure is otherwise virtually unaltered.

Crow Creek Bridge, Bridge No. 33C-204, is significant in the area of engineering at the local level. It is the only know barrel-arch, open spandrel bridge in Alameda County and represents a reinforced concrete bridge design type that is transitional between the filled spandrel and the open spandrel design types. Refer to photographs for views of the bridge structure.

Reinforced concrete bridge building in the U.S. began in 1889 in San Francisco. The development of reinforced concrete arch bridges followed a definite pattern, with filled spandrel bridges gradually giving way to open spandrel arches. In the filled spandrel bridge, the arch barrel supports two longitudinal spandrel walls, one at either side of the roadway. These walls in turn retain a filling of earth or gravel upon which the roadway surface is placed. In the open spandrel bridge, the arch ribs support a series of columns which in turn carry the roadway deck.

Crow Creek Bridge appears to be a transitional design between the two aforementioned types. In place of the arch ribs that are usually associated with the open spandrel arch, this bridge utilizes a full-width barrel-arch to support the vertical members; these vertical members are also full-width, rather than being columns. The deck railings are an indicator of a carryover from the earlier filled spandrel bridge, which very often had solid concrete railings; most open spandrel arch bridges are found with baluster-type railings.

Research into CALTRANS' records indicates that there are seven reinforced concrete arch bridges remaining in Alameda County. One of these is a standard arch culvert, three are filled spandrel arches (one of which has been widened and modified and has lost all design integrity), and three are open spandrel arches. Of the latter, two are rib-type arches. Crow Creek Bridge is the only barrel-arch, open spandrel bridge in the County, and, as discussed above, appears to represent a transitional design between the filled spandrel and the open spandrel bridge types. The bridge thus is significant at the local level in engineering.

BIBLIOGRAPHY

A Nation in Motion: Historic American Transportation Sites, Washington, D.C., U.S. Department of Transportation, 1976.

Harrington, Thomas J., Bridge No. 33C-204, California Department of Transportation, Office of Structures Bridge Report. April 12, 1978.

Snyder, John W., Historic Property Survey, Crow Creek Bridge, California Department of Transportation, Office of Structures. June 5, 1979

EXHIBIT 1

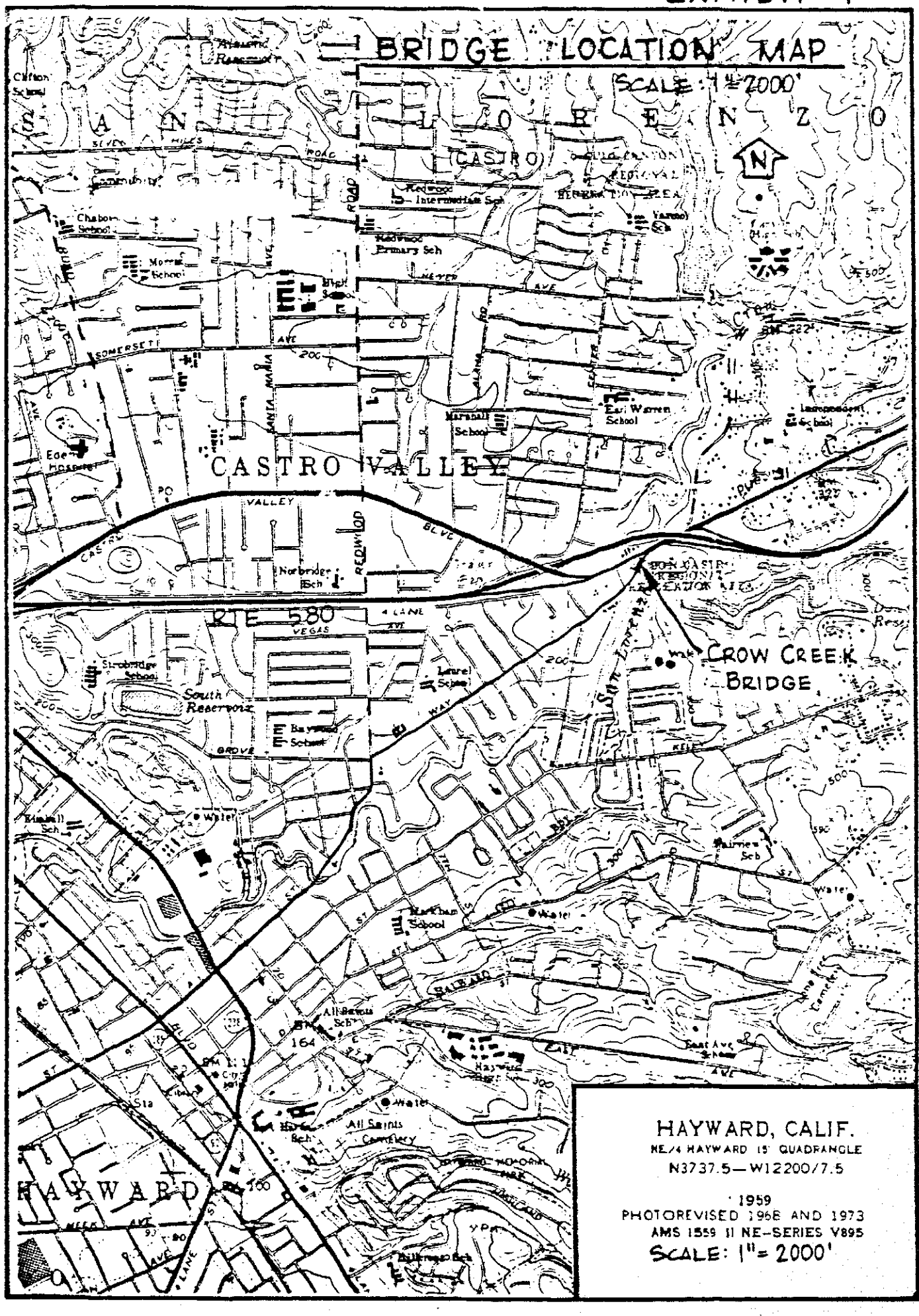
BRIDGE LOCATION MAP
SCALE: 1" = 2000'
SAN LORENZO
CASTRO VALLEY
HAYWARD
CROW CREEK BRIDGE
HAYWARD, CALIF.
NE/4 HAYWARD 15' QUADRANGLE
N3737.5—W12200/7.5
1959
PHOTOREVISED 1968 AND 1973
AMS 1559 II NE-SERIES V895
SCALE: 1" = 2000'

EXHIBIT 2

SKETCH MAP OF BRIDGE LOCATION

SCALE: 1" = 250'